# UNCLASSIFIED

AD

403 257

Reproduced by the

DEFENSE DOCUMENTATION CENTER

**FOR** 

SCIENTIFIC AND TECHNICAL INFORMATION

CAMERON STATION. ALEXANDRIA. VIRGINIA



UNCLASSIFIED

NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

JPRS: 18,191

OTS: 63-21351

FOR REFERENCE ONLY AT EACH OF THE
ODC OFFICES. THIS REPORT CANNOT
BE SATISFACTORILY REPRODUCED, DOC
DOES NOT FURNISH COPIES.

PATHOLOGIC PHYSIOLOGY OF THE INFECTIOUS PROCESS

- USSR -

# 103 257



U. S. DEPARTMENT OF COMMUNICE

OFFICE OF TECH DIAL SERVICES

JOINT PUBLICATIONS RESEARCH SERVICE
Building T-30
Ohio Or. and Independence Ave., S.W.
Washington 25, D. C.

Price: \$.50

Best Available Copy

#### FOREWORD

This publication was prepared under contract for the Joint Publications Research Service as a translation or foreign-language research service to the various federal government departments.

The contents of this material in no way represent the policies, views or attitudes of the U. S. Government or of the parties to any distribution arrangement.

#### PROCUREMENT OF JPRS REPORTS

All JPRS reports may be ordered from the Office of Technical Services. Reports published prior to 1 February 1963 can be provided, for the most part, only in photocopy (xerox). Those published after 1 February 1963 will be provided in printed form.

Details on special subscription arrangements for JPRS social science reports will be provided upon request.

No cumulative subject index or catalog of all JPRS reports has been compiled.

All JPRS reports are listed in the Monthly Catalog of U. S. Government Publications, available on subscription at \$4.50 per year (\$6.00 foreign), including an annual index, from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

All JPRS scientific and technical reports are cataloged and subject-indexed in <u>Technical Translations</u>, published semimonthly by the Office of Technical Services, and also available on subscription (\$12.00 per year domestic, \$16.00 foreign) from the Superintendent of Documents. Schlantial indexes to Technical Translations are available at additional cost.

#### PATHOLOGIC PHYSICLOGY OF THE INFECTIOUS PROCESS

Following is a translation of passages from the Russianlanguage book <u>Voprosy Patologicheskoy Fiziologic</u> <u>Infektaionnogo Proteessa</u>, (Problems of the Pathologic Physiology of the Infectious Process), Koscow, 1962

#### TABLE OF CONTENTS SECTION 1

# THE INFLUENCE OF BACTERIAL TOXING AND ANTIGANS ON THE NEUROHUMORAL REGULATION OF FUNCTIONS

Ado, A. D., Problems of the Pathologic Physiology of the	
Infectious Process	3
Abrosimov, V. N., On the Action of Diphtheria Toxin on th	16
Central Nervous Regulation of Respiration	17
Abrosimov, V. N., Disturbances in the Nervous Regulation	
of Respiration under the Influence of the Toxic	
Components of Pertussis Bacilli	26
Yerzina, G. A., Electrophysiologic Studies of the Action of Serum Proteins and Certain Bacterial Toxins	
on the Receptors of the Skeletal Muscles	36
Yerzina, G. A., Electrophysic Studies of the Functional	
State of the Muscle Receptors in Local Tetanus	41
Sverdlov, Yu. S., The Problem of the Mode of Action of	
Tetanus Toxin on the Spinal Centers	49
Alekseyeva, T. A., The Action of the Herpes Virus	
on the Functional State of the Sympathetic	
Nervous System	60
Alekseyeva, T. A., Pathophysiologic Studies of the Mechanism of the Toxic Action of the Influensa	
Virus	68
Gushchin, I. S., On the Mechanism of the Changes in the	
Pressor Carotid Sigus Reflex in Anaphylaxis	76
Pytskiy, V. I., On the Problem of the Mechanism of	
Development of Tolerance to the Pyrogenic	
Rifect of Certain Bacterial Antigens	83

#### TABLE OF CONTENTS (Continued)

Ishimova, U. M. and Nguyen Mang An, On the Mochanish	n
of Different Phases of the Anaphy waris Conti	
of Smooth Muscles of the Small Intestine	e.
Abrosimov, V. N., On the Changes in Reactivity of the	he
Organism under the Influence of the Toxic	
Components of Fortussia Bacilli	10.
Odegova, V. V., The Influence of Single Sensitization	<b>3</b> fi
on the Conditioned Reflex Activity to Dogs	11
Lazareva, V. N., On the Causes of Changes in the Re-	action
of Cardinvascular System of Rabbits Infected	
with B. Typhimurium on the Sympathomimetic	
Substance	118
Ivanova, L. A., On the Content of Adenosine Triphos	shorte
Acid, Creatine Phosphate, and Mineral Phospi	
on the Heart, Brain, and Skeletal Muscles of	
White Rats in Diphtheria Tox.city	126
Pytakiy, V. I., On the Changes in the Course of the	•••
Reaction luring the Use of Cortisone	131
Ivanov, V. M., Changes in the Resistance of White Re	its to the
Toxic Effects of Vaccine under the Influence	
Adrenalectomy and the Administration of Certa	
Hormones	13.
Ivanov, V. M. On the Mechanism of the Neuro-endocate	rine .
Influences on the Registances of White Rats	
Diphtheria Toxin	14
Gushchin, I. S., On the Participation of the Hypoth	
in the Development of Anaphylactoid Sheak in	
White Rats	14
Ma Bao-li. The Role of the Adrenal-Pituatary System	<b>—</b> -
Anaphylactoid Reaction and Certain 'spects of	
Hechanism of Tachyphylania	15
Rhe Chio-tazyao, The Role of the Adrenal-Pituitary	10
System in the Development of Anaphylanes in	
White Sats	16"
स्वाक्षांक प्राप्तः । इत्या पाळा	10

#### TABLE OF CONTENTS (CONTINUED)

# SECTION II ON THE INTERSTITIAL ANTIGENS IN MAIN TISSUE

Ado, A. D., On the Interstitial Antigons in the Brain	
Tissue of Animals Infected with Neuroviruses	1,84
Kanchurin, A. Kh., On the Study of the Interstitial	
Antigens in Fixed Substances of the Drain Tiesuc	
Infected with Virus by the Method of Agar	
Precipitation	16.3
Kanchurin, A. Kh., On the Formation of Intershitial	
Antigenic Substances upon the Proliferation of	
the Policewelytis Virus in Brain Cassuss	).
Ado, A. D., Timova, S. M., Levkovich, Te. H.,	
On the Demonstration of Interstitial Antigens in	
House Drain Vancine Against Spring-Summer Tick	
· Incephalitis	210
Skorik, Y. A., The Demonstration of Interstitial Antigenr	
in the Tissues of the Ermins of Inimals Infected	
with Horpes	• , • -
Shorit, ", Peculiarities of the Antigonia Properties	
of Drain Tissues in Experimental Herpes	200
SECTION III	
ON THE RELOCKINGY OF THE LYNDROLD ANDARACUS	
THE CHICACOTTE CILL	
n 1977 - Albert - Alberta William A. A. A. A And Added	
No Amilsya, J. T., On the Problem of the Role of the	
Limph Rodes in the Immunologic Rectivity of the	
	,
Jegunise	
Timove, J. H., The Action of the Mirus of Influenza	
Croup on the Phagocytosis of Carbine by the	
Leurocytes 42 It mune and Mon-Immune Cats	5.18
<b>***</b> *********************************	
SECTION I"	
OF THE ENGRETION OF BACTERIAL AWAIGENS AND PHAGES	
EY THE KIDHES	
Toliner, A On the Excretion by the Kidneys of the	
Macronolecules of Dysentery intigens	253
Undritsov, H. I., The Distribution of the Dysentery	
Antigen in the Organism of the Dog	
Undritsov, H. I., The Excretion by the Kichey; of the	•
Dysentery intigen Labeled with Radioactive	
Thosphorus	577
17色型 Littering Man	- 11

#### TABLE OF CONTENTS (Continued)

Reznik, A. Ye., On the Problem of the Exerction of the Dysentery Antigen by the Kidneys in the Process of Vaccination and during the Course of Acute Dysentery

204

Zobnina, K. S., Ca the Exerction by the Eldneys of the Dysentery Easteriophage in Different States of Reactivity of the Organism

201

# THE ACTION OF PIPHTBURIA TOTAL ON THE CENTRAL NERVOIS ESQUIATION OF RESPIRATION (CONCLUSIONS)

- (1) In the mechanism of disturbances of respiration during experimental diphtheria toxisicity, disturbances of the cholinergic mechanism of synaptic transmission in the respiratory center is of great importance.
- (2) As a result of disturbances of the central regulation of respiration in diphtheria toxisicity, there are changes in the frequency and amplitude of the respiratory movements, disturbances of the respiratory reflexes (Hering-Breuer reflex and the respiratory reflex to stimulation of the sciatic nerve).
- (3) Recording of action potentials from the peripheral end of the vagus merve did not emert a substantial influence of diphtheria toxin on the stretch receptors of the lungs.
- (4) Diphtheria towin elicits, in rate and in cats, disturbances of respiratory movements which are enhanced by the administration of small doses of eserine into the fourth ventricle.

DISTURBANCES OF NERVOES REQUIATION OF RESPIRATION UNDER THE INFLUENCE OF THE TOXIC COMPONENTS OF PERTUSSIS INCILLI

(1) The town of the pertussis bacilus, in contrast to diphtheria toxia, causes an increase in the reflex

.:

stimulability of the impiratory portion of the respiratory center with subsequent intensification of the stimulability of the expiratory center.

(2) It may be suggested that the token of the pertussis backlus directly effects the respiratory center, causing disorders in regulation of respiration.

BLECTROPHYSIOLOGIC STUDIES OF THE ACTION OF SERUM PROGRIES AND CERIAIN BACTERIAL TOXING ON THE RECEPTORS OF SELLETAL HUSCLES

- (1) Equipe and bogine sero, diphtheria and tetinus toxins, complete typhoid fever antigens injected into the blood vessels of the gastroonemius muscle (of cats and of rabbits) cause negligible changes in the background pulses of sensory nerves of these muscles.
- (2) The injection of the above-mentioned antigens into the vessels of the muscles of sensitized animals is accompanied by a marked acceleration of the biocurrents of the sensory nerve.
- (3) Under the conditions of our experiments, we did not notice any particular specific pulsation in the sensory nerves of nuscles which would characterize the effect of a definite type of antigen on the muscle receptors.

ELECTROPHYSIOLOGIC STUDIES OF THE FURCTIONAL STATE OF THE HUSCLE RECEPTORS IN LOCAL TETANUS

- (1) Spontaneous pulsations of the muscle fibers of a "tetanic" extremity is intensified as compared with a control extremity. After transaction of the anterior roots, the electrical activity of the fibers of the extremity which is poisoned with the towin noticeably declines.
- (2) The injection of the tetaum toxin into a preliminarily de-efferented extremity is not accompanied by the development of local tetanus. The electrical activity of the fibers in such a case is distinguished by a lower level

of activity of the fibers of the control extramity.

- (3) The same result is observed under the conditions of combined poisoning of an animal first with the toxin of botulism, and then by the industion of paralysis with the tetamus toxin.
- (4) The muscle fibers of the extremity infected with the tetanus toxin shows a more intense series of pulses in response to stretching the muscle with a weight than do the fibers of the control extremity. After transection of the saterior roots, which contain gamma fibers, there is an almost identical reaction of the muscle fibers of the "tetanic" and the control extremities.
- (5) Changes in the functional state of the muscle fibers in local tetanus depends not on a direct effect of the toxin on the receptors but rather are connected, it would meen, with its fixation in the corresponding cells in the spinal cord. It is possible that these are the gamma-motor neurons, or perhaps with other nerve structures which are functionally connected with the gamma-meter neurons, which participate directly in the regulation of the tone of the muscle fibers.

ON THE PROBLEM OF THE MODE OF ACTION OF TETAMUS TOXIN ON THE SPINAL CENTERS

- (1) The development of local tetamus is accompanied by a considerable intensification of the polysymaptic reflex discharges on the side of the injection of toxin. In this case, during the first two to three days of the disease, there are no substantial differences in the magnitude of the monosynaptic responses to the "tetamic" and the control sides.
- (2) Along with an enhancement in the polysymaptic reflexes, there is a disappearance of the different types of synaptic inhibition of motor neurons of suscles of the "tetasic" extremity.

- (3) The changes described in the character of the reflex activity of the spinal cord, which uncompany the development of local tetangs on the first day after the injection of the toxin, are similar to cause which are seen upon injection of tetanus toxin into the rows trunk or directly into the spinal cord (Brooks, Surtis, and Eccles, 1957).
- (4) By the fourth to fifth days, and sometimes even on the third day after infection of the lowin, the "tetanic" extremity shows a marked reduction in the magnitude of the maximal mone-symptic reflexes, even to the extent of complete disappearance of them. As the same time, the poly-symptic reflexes remain markedly enhanced.
- (5) Upon testing the inhibition of the motor neurons of the extensor muscles with pulsos from the afforent fibers of groups 2 and 3, in a number of cases on the side of injection of the toxin there is a replacement of the inhibitory effect by a facilitation of it.
- (6) The action of tetanus toxin on the spinal centers is not limited to the suppression of the processes of central inhibition, but also consists in a weakening of the stimulatory influence on the motor neurons.

### THE ACTION OF THE HERPES VIRUS ON THE MUNICIPAL STATE OF THE SYMPATHETIC MERCOLS SYSTEM

- (1) The virus of herpes strain 12, applied to a scarrified cornes of a rabbit's eye, causes the development of keratoconjuntivities in this eye.
- (2) In the injured corner of the repbit, the virus can be detected from the second to the eleventh days after infection.
- (3) Upon application of the virus to the scarrified corner of the rabbit's eye, the virus can be recovered from the superior corvical sympathetic gaughion of the insilateral side beginning with the fourth day after infection.

- (4) Soon after infection, at a time when the virus cannot be recovered even from the superior cervical sympathetic ganglion, there is an increase in the functional mobility of the cells of the ganglion on the side of infection and a corresponding reduction in the threshold strength of stimulation by three-fold as compared with the healthy side.
- (5) Later following infection, when the virus can be recovered from the superior sympathetic gaughton, there is a reduction in the functional mobility of the gaughton cells on the infected side and an increase in the threshold of stimulation by 2.6 fold as compared with contralateral side.

#### PATHOPHYSIOLOGIC STUDIES OF THE MECHANISH OF THE TOXIC EFFECT OF THE INFLUENCE VIEWS

- (1) Electrophysiologic studies have shown that the sormal allantoic liquid of a IS-day chief embryo does not redify the functional mobility of ganglion cells.
- (2) An allantoic culture of the influenza virus of the Shklyaver strain in homogelutination titers of 1:320 to 1:1880 exerts a toxic effect on gauglien cells which takes the form of a rejuction in the functional mobility and a decline in the sensitivity to asetylcholine.
- (3) Allangoic cultures of the influenza virus type A of the Shklyaver strain in low hemagglutination titers (1:80 to 1:150) stimulate the cells of the sympathetic gand hon, by increasing their functional mobility.
- (4) In animals which are actively immunized to the influenza virus, the latter does not exert any toxic effect. The action of the influenza virus on the cells of he sympathetic ganglion are immunologically specific. In cata immunized with the influenza virus type A, the toxic effect of the virus type B is manifest to the same degree as in healthy saimals.
  - (5) Ideas are developed in this work concerning the

importance of the data obtained for our understanding of certain aspects of the pathogenesis and immunity of influence infection.

## ON THE MECHANISM OF CHANGES IN THE PRESSOR CAROTID SINUS REFLEX IN ANAPHYLAXIS

- (1) Against the background of anaphylactic shock, there is a complete disappearance of the carotid sinus pressor reflex.
- (2) In the pressor zone of the reticular sone of the brain stem, during the course of anaphylactic shock, a state of inhibition develops which is evidenced by a disappearance of the pressor effect upon stimulation of this zone and a preservation of the pressor effect upon stimulation of the preganglionic trunk of the splanchnic nerve.
- (3) The injection of aminazin into a sensitized animal stabilizes the level of the blood pressure with respect to the subsequent injection of the antigen, and prevents a fatal outcome from the anaphylactic shock.

THE PROBLEM OF THE MECHANISM OF DEVELOPMENT OF TOLERANCE TO THE PYROGENIC EFFECT OF CERTAIN BICTERIAL ANTIGENS

- (1) The development of an antipyrogenic tolerance is related to a certain extent to the participation of pathophysiologic mechanisms of immunity.
- (2) On the basis of the pathophysiclogic mechanisms of antipyrogenic tolerance lie the changes in the functional state of the heat regulating centur, obviously involving an inhibition of it.
- (3) The antipyrogenic tolerance to the antigen may be reversed in the process of developing a conditioned reflex hyperthermic reaction.

#### On the mechanism of different primary in the anamylactic contraction of shoots execuse of the shall interity

- (1) The isolated intestine of guines pige and white rate is more sensitive to acceptabelian than to Martenine.
  - (2) The anaphylactic contraction of the investing sensitized rats and gaines pigs takes the lord of block or reaction: an initial rapid part -- to peak block, as a subsequent slow portion -- too platery phase.
  - (3) Histamine is not an intermediate link in the mechanism of the first phase, since diprazin local action of the development of it.
  - (4) In the mechanism of the first of the of the anaphylactic contraction of the small intestant, sidmination of the cholinergic intramural upparatus as of grown intermed. This is proved by the fact that attropius eliminates, traces essering enhances this phase.
  - (5) The first phase of the anaphylactic yearsts the isolated intestine -- the neak phase -- is climbal. the action of the ganglicale-blocking substances.

ON THE CHANGES IN THE REACTIVITY OF THE CREATES AND WELL INFLUENCE OF THE TOXIC COMPONENTS OF THE PERTUSSION DIDENT.

- by a heightening of the general sensitivity of mirals not only to histamine but also to acetyloholine a compact choline.
- (2) Under the influence of the logic on Commin components of the pertussis bacillis, there is an increase the sensitivity of the smooth muscle of the impact on bronchi to scetylcholine and to carbocholine.

THE INFLUENCE OF SINGLE SINSITIVATION TO COMMITTALE MACTIVITY IN DOCS

(1) Single sensitization with horse serve with logs of the strong type does not cause prolonged and substances changes in higher nervous activity.

- (2) In dogs of the weak type of higher nervous activity, following sensitization there is a disturbance in the differential inhibition. The strength of the stimulatory process is noticeably increased.
- (3) A non-specific stimulus in the form of injection of physiologic saline solution causes changes in the higher nervous activity which are similar to the changes observed upon single sensitization.

ON THE CAUSES OF THE CHANGES IN THE REACTION OF THE CARDIOVASCULAR SYSTEM OF RABBITS INFECTED WITH B. TYPHINURIUM TO SYMPATHCHINETIC SUBSTANCES

- (1) In rabbits infected with B. typhimurium, there is a reduction in the pressor reaction of the blood pressure not only to adrenalin but also to ephedrine.
- (2) Upon injection of solutions of adrenalin, the constriction of the vessels of the ears in sick rabbits was more pronounced than in the control rabbits. Hence, it may be suggested that the lesser increase in the blood pressure in sick rabbits upon injection of sympathomizatic amines is not a consequence of the reduction in the sensitivity of the adrenoreactive systems.
- (3) One of the causes of the increased sensitivity of the ardenoreactive systems is, it would seem, a reduction in the content of adrenalin in the blood, since frequently, against a background of atropine, a greater pressor reaction to adrenalin corresponds to a smaller concentration of adrenalin in the blood.
- (4) There is a definite relationship between the content of adrenalin and the pressor reaction to ephedrine. Apparently, the reduction of the concentration of adrenalin is one of the causes of the lesser increase in pressure upon injection of ephedrine.

ON THE CONTENT OF ADENOSINE TRITHOSPHORIC ACID, CREATINE PHOSPHATE, AND MINERAL PHOSPHORUS IN THE SLOOD, MRAIN, AND SERLETAL MUSCLES OF WHITE RATE DURING DIPETRERIA TOXISICITY

- (1) In the cardise muscle and in the brain of white rats, adenosine polyphosphoric compounds are present in smaller amounts than in the skeletal muscles.
- (2) Experimental diphtheria toxisicity in white rats is accompanied by a negligible increase in creatine phosphate in the cardiac nuscle and in the brain by a more noticeable increase of it in the skeletal nuscles.
- (3) In the skeletal muscles, a reduction in the content may be noted regardless of the degree of manifestation of the diphtheria toxisicity, whereas in the heart, such a reduction is noted only in the presence of a severe degree of toxisicity.
- (4) Mild diphtheria toxisicity in white rats is accompanied by a reduction of mineral phosphorus in the heart, brain, and skeletal muscles, who cas a more severe toxisicity is accompanied by an increase of it only in the heart and in the brain.
- (5) Disturbances of phosphorus metabolism in diphtheria toxisicity occur primarily in the skeletal muscles, and subsequently in the heart and brain.
- (6) The position regarding the resistance of white rats to diphtheria toxin has been confirmed essentially by our experimental data, through studies of phosphorus metabolism.

ON THE CHANGES IN THE COURSE OF THE FEBRILE REACTION DURING

(1) Cortisons inhibits the development of the febrile reaction caused by the streptococcal vaccine. With prolonged daily injection of cortisons, it gradually loses its antipyrogenic properties and the febrile reaction again emerges.

(2) During the process of prolonged administration of cortisone, the heat-regulating centers are first inhibited, and then begin to escape from this inhibitory influence, which serves as a basic demonstration of the development of the febrile reaction in the presence of pyrogenic factors in the organism.

CHANGES IN THE RESISTANCE OF WHITE RATS TO THE TOXIC EFFECT OF VACCINE UNDER THE INFLUENCE OF ADRENALBOTORY AND THE ADMINISTRATION OF CERTAIN HORMONES

- (1) The bilateral removal of the adrenal glands or the injection of insulin is accompanied by a marked reduction in the resistance of the rats to the toxic effects of vaccine made from the Gertner bacillus.
- (2) The administration of cortisons completely, and of thyroid hormone only partially, restores the resistance to the toxic effect of vaccine, which has been diminished by adrenal ectomy.
- (3) Cortisons (in the dose used) does not reduce the resistance of normal animals to the toxic action of vaccine.

ON THE MECHANISM OF THE NEUROBNDOCRINE INFLUENCES ON THE RESISTANCE OF WHITE RATS TO DIPHTHERIA TOXIN

- (1) The removal of the pituitary gland is accompanied by a reduction in the resistance of white rats to diphtheria toxin.
- (2) ACTH, administered to rate in which the pituitary has been removed, restores their resistance to diphtheria toxin.
- (3) Disruption of higher nervous activity alters the reaction of animals in the direction of enhancing their sensitivity to diphtheria toxin.
  - (4) Disruption of higher nervous activity does not

exert any dilatarious influence on the resistance of rate to the diphtheria texis under conditions of absence of the pituitary.

- (5) Upon administration of ACTI, the resistance of neurotic rats to diphtheria toxin is increased.
- (6) The pituitary, it seems, participates in the realization of the influence of discuption of higher norvous activity on the resistance of white rate to diphtheria toxin.

ON THE PARTICIPATION OF THE HYPOTHALLMUS IN THE DEVELOPMENT OF ANAPHYLACTOID SHOCK IN WHITE DATS

- (1) Upon inflicting damage upon the ventromedial nuclei of the mid-hypothalamus, there is atrophy of the adrenal glands which appears by the 15th day and reaches its greatest extent at later times following operation (35th to 40th day).
- (2) On the 7th and 15th days after operation, changes in the sensitivity of white rats to intravenous injection of egg albumin cannot be demonstrated.
- (3) By the 35th to 40th days after operation, there is a reduction in the value of the DL50 of egg albumin by three-fold as compared with the control animals.

THE ROLE OF THE ADMENAL-PITUITARY SYSTEM IN THE DEVELOPMENT OF ANAPHYLAXIS IN WHITE RATS

- (1) Anaphylactic shock in white rats may be produced by sensitizing them to foreign serum admixed with vaseline.
- (2) Adress lectomy reduces the resistance of rats to anaphylaxis. Cortisone increases their resistance to anaphylaxis whereas DOCA and adrenalize proved to be ineffective in this respect. The removal of the pituitary gland did not change the sensitivity of rats to the first injection of foreign protein, but substantially changed their susceptibility to sensitization. ACTH increases the resistance of rats from

which the picultary has been removed sized to the level of the resistance of non-sensitized and miss. Cortisons to less effective in this regard than JOTH, Edrualia shows no influence.

- (3) The permechility of the skin capallaries in rate sensitized with borse serum in vaseline is increased. Removal of the pituitary or the administration of ACTA to the operated saimals is not reflected in the state of permeability of the skin capillaries.
- (4) There is no parallelism between the anaphylactic reaction in vitro and the general reaction of the organism. The isolated intestine of rats sensitized to foreign serum in vageline does not show any pronounced anaphylactic contraction. Removal of the pituitary of of the adrenal grands heightens the sensitivity of the small intestine to foreign serum and to histamine both in sensitized and in non-sensitized rats.
- depend on the degree of accumulation of precipitins in the blood. The titer of precipitins in the blood. The titer of precipitins in the blood of sensitized rate is low. Advantageously or the administration of contisone exerts no marked influence on the titer of precipitins. Removal of the pituitary reduces the titer of precipitins, whereas injection of ACTH increases it slightly.
- (6) The role of the adrenal-pituitary system in anaphylaxis consists in its non-specific protective and adaptive function; in the realization of this function, an important link is the corder of the adrenal plands.

- E N D -

1653

CS0:7500-M